Prevention®

Model WS-820

WRIST BLOOD PRESSURE MONITOR

INSTRUCTIONS — ENGLISH

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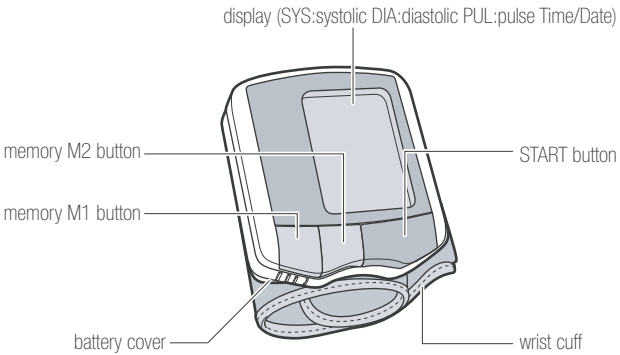
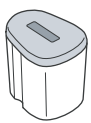
PARTS NAMES AND PRODUCT COMPONENTS





carrying case

instruction manual

quick guide

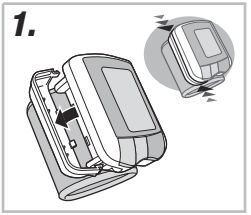
wellness tracking chart

PRECAUTIONS FOR USE

- **Do not use this instrument without your doctor's consultation if you are under dialysis therapy or on anticoagulants, antiplatelets or steroids. Use of this instrument under such conditions could cause internal bleeding.**
- **For specific information on your blood pressure, contact your doctor. Never make any judgement on your own regarding measurment results.**
- **Use of this device in areas near portable phones, microwave ovens or other devices with strong electromagnetic fields may cause malfunctions.**
- **Do not execute repeated measurements. This will cause engorgement of the wrist, and correct values will not be obtained.**

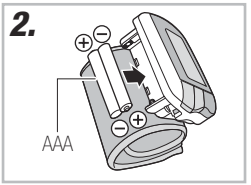
INSTALLING BATTERIES AND SETTING THE CLOCK

1. **Remove the battery cover by slightly pressing its sides in the direction of the arrows.**



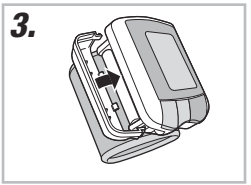
2. **Install two AAA Alkaline dry cells in the battery compartment.**

CAUTION! Do not use rechargeable batteries.

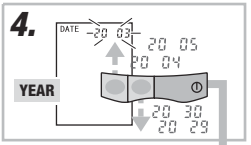


3. **Install the battery cover.**

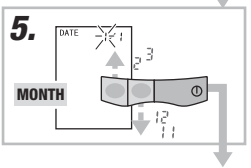
Clock can be set only after the batteries are reinstalled.



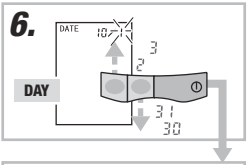
4. **Use the M1 button to increase the year or the M2 button to decrease the year. Press the START button to confirm.**



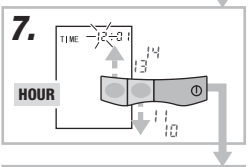
5. **Month Flashes**
Adjust with M1 and M2 buttons and press START button to confirm.



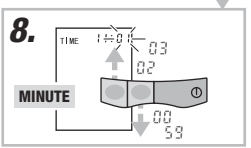
6. **Day flashes.**
Adjust with M1 and M2 buttons and press START button to confirm.



7. **Hour flashes.**
The clock operates in 24-hour mode.
Adjust with M1 and M2 buttons and press START button to confirm.



8. **Minute flashes.**
Adjust with M1 and M2 buttons and press START button to confirm.
The clock is set and the unit is turned off.



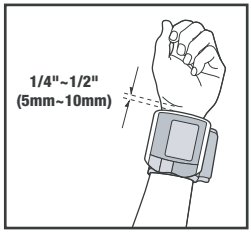
Since neither the device nor batteries are household waste, follow your national/local recycling rules and dispose of them at appropriate collection sites.

Battery replacement indication
Replace all the batteries when the battery replacement indication appears on the display or nothing is displayed when START button is depressed.

Fresh AAA alkaline dry cells will last for approximately 300 measurements.

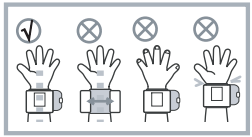
WRAPPING THE CUFF AROUND YOUR WRIST

1. **With the palm of your left hand up, put the cuff on your wrist so that the display screen is on the same side as your palm.**
   If it is impossible to put the cuff on your left wrist, use your right wrist for measurement.



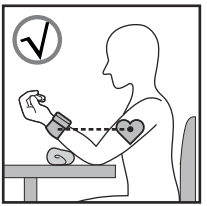
2. **Adjust the cuff, with your palm up, until its top edge is positioned 1/4" to 1/2" (5 mm to 10 mm) from the bottom of your palm. Place the unit at the center of your wrist.**

3. **Fasten the cuff around your wrist so that there is no space between the cuff and your wrist. The cuff should fit snugly. Press the surface of the cuff to make sure the hook and loop attach securely.**
   Position the cuff directly the skin. Take care that your clothes are not caught by the cuff.



CORRECT MEASURING POSTURE

1. **Sit on a chair or lie down and follow instructions below.**
2. **Lightly open your left hand, with your palm up, and put your elbow on a table or stand.**
3. **Adjust the cuff to the same height as your heart. Use a comfortable support, such as a folded towel.**



- When There Is No Table Available

1. Sit on a chair.
2. Adjust the cuff to the same height as your heart by lightly applying your left arm to your breast.
3. Lightly support your arm with your right hand during measurement, but do not touch the cuff.

- Taking a Measurement in Bed

1. Lie on your back.
2. Adjust the cuff to the same height as your heart. Use a comfortable support, such as a folded towel.

IMPORTANT! Keep Cuff At Heart Height

Measured data may vary slightly depending on the posture during measurement.

Measurements should always be taken using the same wrist in the same position.

If the cuff is lower (higher) than the heart, the measured reading tends to become larger (smaller).

MEASURING METHOD

1. Press START button.

The cuff is automatically inflated to the applied pressure.

Pressure (displayed value) starts to decrease and pulse is indicated by heart symbol.

When the measurement is complete, air is automatically released from the cuff.

Maximum and minimum blood pressures and pulse rate are displayed.

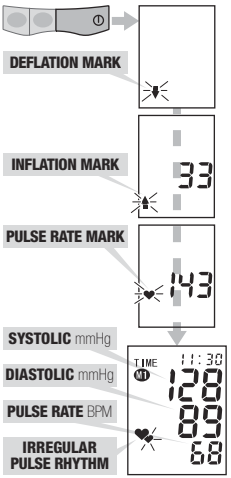
Heart symbol flashes when pulse rhythm detected during measurement was irregular.

2. Press either one of memory buttons, M1 or M2, and the result is stored in the selected bank.

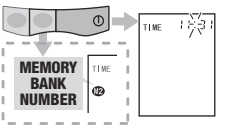
The selected memory bank number is shown on the display. The result is stored in the bank selected when the unit is turned off. *Irregular pulse rhythm indication will not be stored, only blood pressure and pulse rate are stored. When a measurement resulted in an error, it will not be stored.*

3. Press START button to turn off the power.

If you forget to turn off the unit, it will automatically turn off after 3 minutes.



Wait 2 -3 minutes between repeated measuements.



Automatic Repressurization

If the pressure applied is judged insufficient in the early phase of measurement or if movement of the hand or wrist occurs during measurement, the unit will inflate again to a level about 40 mmHg higher. *Automatic Repressurization is repeated until a measurement is made. However, this does not indicate a problem.*

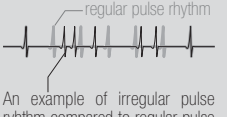
To manually control pressurization, hold down START button immediately after the start of inflation and release it when the pressure reaches the level 50 mmHg higher than the expected maximum systolic pressure. If the pressure value has exceeded 180 mmHg, the inflation will stop when the key is released. Pressure can be increased to approximately 300 mmHg.

To stop measurement

Press START button and the unit stops inflation, discharges air rapidly, and then turns off.

Irregular pulse rhythm indication

Heart symbol flashing in measurement result display indicates irregular pulse rhythm. Irregular pulse rhythm can result from body movement during measurement or can be caused by arrhythmias. Although constant appearance of the indication under quiet measurements may suggest arrhythmias, do not make any judgment on your own before your doctor's consultation.



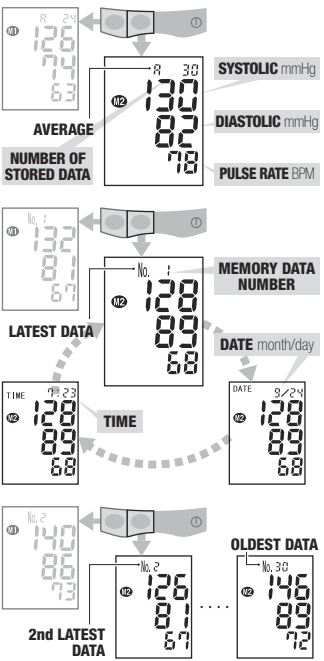
An example of irregular pulse ryhthm compared to regular pulse rhythm

MEMORY FUNCTION

Measured result is stored in either M1 or M2. Each of two memory banks can hold up to 30 results and their running average. When the number of measurements exceeds 30, the oldest data will be deleted to record new data. Use separate memory banks to track results of you and a friend or family member, or use one memory bank to store morning results and the other to store evening results.

► RECALLING STORED DATA

1. **Press memory M1 button or memory M2 button to see stored data.**
2. **The average of the stored result in the selected bank is displayed.**
   The latest result stored is displayed when there is only a single result. The clock displays when there are no results stored.
   The indication at the top of the display alternately changes from memory data number to date to time .
   The memory data is displayed for approximately 30 seconds. Approximately 30 seconds after memory button is released, the apparatus will turn off.
3. **Press memory button to move to next data.**
   The memory data number 1 is the latest among the stored data in the selected memory bank.
4. **Every depression of memory button switches among the memory data.**
   As memory button is pressed, the memory data number increases; the bigger the number, the older the result.
5. **Press START button to turn off the unit.**



► DELETING STORED DATA

1. **Show the individual result to be erased or the average of a memory bank to clear all the memory bank data.**
2. **Press and hold down either one of memory buttons: M1 button to erase specified data in memory bank M1, and M2 button to erase specified data in memory bank M2.**
   The displayed data starts flashing.
3. **Hold down the button until nothing but the memory bank number is displayed.**

ERROR DISPLAYS AND TROUBLESHOOTING

ERROR SYMOL / SYMPTOM	CAUSE / CHECK POINT	REMEDY
OVER-PRESSURIZATION	The pressurization was not enough to make a measurement even though the cuff was inflated to the maximum value because of wrist movement or talking during measurement.	Do not move during measurement.
MEASUREMENT ERROR	Measurement could not be made because of moving or talking during measurement.	Being quiet and still during measurement.
INFLATION ERROR	The cuff is not properly applied. The cuff is damaged.	Properly apply the cuff. If Err-2 appears after re-trying to apply the cuff properly, assume the cuff is damaged. Contact your dealer.
DEFLATION ERROR	Movement or talking was detected during measurement.	Turn off the power and make another measurement while being quiet and still.
IMPROPER OPERATION	START button was accidentally pressed during battery replacement.	Press START button once to turn off the power and press it again to start a measurement.
No display when START button is pressed.	Have the batteries run down? Have the batteries polarities been positioned incorrectly? Are the battery terminals clean?	Replace them with new ones. Reinsert the batteries in the correct position. Clean the battery terminals with a dry cloth.

ERROR SYMOL / SYMPTOM	CAUSE / CHECK POINT	REMEDY
Cannot measure or readings are too low (or high).	Are you holding the wrist cuff at heart level? Is the cuff wrapped snugly around the wrist? Are your arms and shoulders tense? Have you been talking or moving your hands during measurement?	Measure with the correct posture. Wrap the wrist cuff correctly. Relax and then measure. Keep quiet while taking the measurement.
Blood pressure is different each time. The reading is extremely low (or high).	Blood pressure readings constantly vary with time of measurement and nervous condition.	Take deep breaths to relax before measuring.

If you cannot get correct measurement with the methods above, stop using the unit and contact your dealer. Do not tamper with the internal mechanism. If the unit malfunctions, please return it to the dealer or an authorized service representative for service according to the warranty. Service data are provided to dealers by the manufacturer.

CARE AND MAINTENANCE

Because the unit includes precision parts, care should be taken to avoid extreme temperature variations, humidity, shock, dust, and direct sunlight. Do not drop or strike the unit. Make sure not to expose the unit to moisture. **This unit is not water resistant.**

Clean the body with a cloth moistened with water and a mild detergent, and then wipe dry. Do not use gasoline, paint thinner, or other strong solvents. Since the cuff may absorb perspiration and other fluids, inspect it for stain and discoloration after each use. When cleaning the cuff, use a synthetic detergent and gently rub the surface.

When storing the unit, do not place heavy objects on it. When the unit has been stored at a temperature below the freezing point, keep it for at least 1 hour in a warm place before using it.

Remove the batteries if the instrument is to be stored for an extended period of time. **Keep the batteries out of reach of children.**

We suggest that you have your monitor checked every two years. This operation may only be performed by the manufacturer or by firms authorized by the manufacturer.

Do not inflate the cuff (start a measurement) when it is not wrapped around your wrist. Do not try to stretch or twist the cuff, and do not bring it into contact with sharp or pointed objects.

Do not disassemble or modify the unit.

BASIC PRODUCT INFORMATION

This manual is intended to assist the user in the safe and efficient operation of the Model WS-820 Automatic Digital Electronic Wrist Blood Pressure Monitor. The product must be used in accordance with the procedures contained in this manual and must not be used for purposes other than those described herein. It is important to read and understand the entire manual.

The user is cautioned that the system may fail to yield specified measurement accuracy if operated or stored in temperature or humidity conditions outside the limits stated in the specifications section of this manual. To insure that accuracy is maintained, compare readings obtained with the WS-820 system with values measured by a trained observer using a manual sphygmomanometer at least every two years.

Indications for Use

The WS-820 system is intended for the non-invasive measurement of systolic and diastolic blood pressure and determination of pulse rate in adult patients, i.e., ages 15 and above. The product is recommended for use by patients with labile (unstable) blood pressure or known hypertension in a home care environment as an adjunct to medical management. The cuff will accommodate a wrist circumference range of approximately 4.9 to 8.5 inches (125 to 215 mm). Pressure is measured over a range of 0 to 300 mmHg and pulse rate over a range of 40 to 160 beats/minute.

Method of Measurement

This product employs the oscillometric method for measurement of blood pressure and pulse rate. The entire system, including the cuff, is a single wrist-mounted unit. The cuff is wrapped around the wrist and automatically pressurized. Circuits within the cuff sense the small oscillations in pressure against the cuff produced by the expansion and contraction of the arteries in the wrist in response to each heart beat. The amplitude of each pressure wave is measured, converted to millimeters of mercury, and displayed on the LCD as a digital value. Responding to heart beats, the electromagnetic deflation control valve maintains the constant deflation rate irrespective of differences in wrist size. A memory circuit stores the 30 most recent measurements for comparison.

Accuracy was evaluated during clinical studies in which results with the WS-820 system were compared with simultaneous auscultatory measurements obtained with a standard sphygmomanometer. In these studies, the onset of the fourth Korotkoff sound was taken as the diastolic pressure for the purpose of determining overall efficacy. A copy of this study is available from the manufacturer on request.

Blood pressure measurements determined with this device are equivalent to those obtained by a trained observer using the cuff stethoscope auscultation method, within the limits prescribed by the American National Standard, Electronic or Automated Sphygmomanometers.

The WS-820 system has the ability to function according to its specifications in the presence of common arrhythmias such as atrial or ventricular premature beats or atrial fibrillation.

WS-820 meets the stringent requirements of German Hypertension League to carry its quality marking.

SPECIFICATIONS

Model	: WS-820	Power Supply	: 2 AAA alkaline (LR03) dry cells
Operating Principle	: Oscillometric method	Memory	: 30 measurements x2 and averages
Indicator	: 12 digit Liquid Crystal Display	Applied Pressure	: 190 mmHg (fixed)
Pressure Indication Range	: 0 to 300 mmHg (cuff pressure)	Operating Environment	: +50F to+104F, 15 to 90% relative humidity
Measuring Range	: 50 to 250 mmHg (systolic)	Storage Environment	: 4F to+122-F, 15 to 95% relative humidity
	: 40 to 180 mmHg (diastolic)	Cuff Type	: Pre-formed type cuff
	: 40 to 160 pulses/min (pulse rate)	Wrist circumference	: Approx. 4.9 to 8.5 in.
Accuracy	: ±3 mmHg (cuff pressure)	Main Unit Size	: 2.5(W) x 2.8(H) x 1.3(D) in.
	: ±5 % of reading (pulse rate)	Weight	: Approx. 3.6 oz. without batteries
Inflation	: Automatic (air pump)		
Deflation	: Automatic (electric control valve)		
Exhaust	: Automatic quick exhaust valve		

Specifications are subject to change without prior notice due to improvements in performance and quality.

LIMITED LIFETIME WARRANTY

-U.S. Customers Only-

This limited warranty does not apply for use in any clinical or commercial application.
Mark of Fitness, Inc. warrants this product to be free of defects in material and workmanship for the life of the original user under normal use, except cuff which has a one year warranty; we make no other express warrantees.
Should any operating defects be discovered, Mark of Fitness, Inc. will repair or replace the defective product or parts at no charge for labor or materials provided:
Said unit is returned postage paid to the factory for servicing, marked Attn: Service Department.
Proof of purchase is included with the product.
A letter accompanies the product and indicates the complaint or defect to be remedied.
A check or money order in the amount of $7.95 is included to cover the shipping and handling costs.
In the event the defect may be remedied without returning the unit, contact the firm by phone or mail first, and every effort will be made to supply the replacement parts quickly and at no charge.
This warranty does not apply to any unit that has been tampered with, abused, accidentally damaged or to damage incurred through improper packing and mishandling in transit to or from the factory.
Mark of Fitness shall in no event be liable to the purchaser for any amount in excess of the cost of repair and/or replacement of the device.
This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

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